

June 19, 2016

Ms. Robin Feller
JRM Environmental, Inc.
PO Box 926
Brownsburg, IN 461120926

RE: Project: Duke Edwardsport
Pace Project No.: 50146738

Dear Ms. Feller:

Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Karen Fullmer
karen.fullmer@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Duke Edwardsport

Pace Project No.: 50146738

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268

Illinois Certification #: 200074

Indiana Certification #: C-49-06

Kansas/NELAP Certification #: E-10177

Kentucky UST Certification #: 0042

Kentucky WW Certification #: 98019

Ohio VAP Certification #: CL-0065

Oklahoma Certification #: 2014-148

Texas Certification #: T104704355-15-9

West Virginia Certification #: 330

Wisconsin Certification #: 999788130

USDA Soil Permit #: P330-10-00128

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SAMPLE SUMMARY

Project: Duke Edwardsport

Pace Project No.: 50146738

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50146738001	Field Blank	Water	06/07/16 10:45	06/07/16 15:10
50146738002	Outfall 002	Water	06/07/16 10:50	06/07/16 15:10
50146738003	Collector Well #1	Water	06/07/16 11:10	06/07/16 15:10
50146738004	Collector Well #2	Water	06/07/16 11:00	06/07/16 15:10
50146738005	501	Water	06/07/16 11:22	06/07/16 15:10
50146738006	501	Water	06/07/16 11:25	06/07/16 15:10

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SAMPLE ANALYTE COUNT

Project: Duke Edwardsport

Pace Project No.: 50146738

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50146738001	Field Blank	EPA 1631E	WJW	1
50146738002	Outfall 002	EPA 1631E	WJW	1
50146738003	Collector Well #1	EPA 1631E	WJW	1
50146738004	Collector Well #2	EPA 1631E	WJW	1
50146738005	501	EPA 1631E	WJW	1
50146738006	501	EPA 200.8	CAW	2
		SM 2540C	MLS	1

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ANALYTICAL RESULTS

Project: Duke Edwardsport

Pace Project No.: 50146738

Sample: Field Blank		Lab ID: 50146738001	Collected: 06/07/16 10:45	Received: 06/07/16 15:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level		Analytical Method: EPA 1631E Preparation Method: EPA 1631E						
Mercury	ND	ng/L	0.50	1	06/15/16 15:40	06/16/16 09:23	7439-97-6	

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ANALYTICAL RESULTS

Project: Duke Edwardsport

Pace Project No.: 50146738

Sample: Outfall 002		Lab ID: 50146738002	Collected: 06/07/16 10:50	Received: 06/07/16 15:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level		Analytical Method: EPA 1631E Preparation Method: EPA 1631E						
Mercury	2.30	ng/L	0.50	1	06/15/16 15:40	06/16/16 10:41	7439-97-6	

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ANALYTICAL RESULTS

Project: Duke Edwardsport

Pace Project No.: 50146738

Sample: Collector Well #1		Lab ID: 50146738003	Collected: 06/07/16 11:10	Received: 06/07/16 15:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level		Analytical Method: EPA 1631E Preparation Method: EPA 1631E						
Mercury	ND	ng/L	0.50	1	06/15/16 15:40	06/16/16 10:49	7439-97-6	

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ANALYTICAL RESULTS

Project: Duke Edwardsport

Pace Project No.: 50146738

Sample: Collector Well #2		Lab ID: 50146738004	Collected: 06/07/16 11:00	Received: 06/07/16 15:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level		Analytical Method: EPA 1631E Preparation Method: EPA 1631E						
Mercury	ND	ng/L	0.50	1	06/15/16 15:40	06/16/16 10:57	7439-97-6	

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ANALYTICAL RESULTS

Project: Duke Edwardsport

Pace Project No.: 50146738

Sample: 501		Lab ID: 50146738005		Collected: 06/07/16 11:22		Received: 06/07/16 15:10		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level		Analytical Method: EPA 1631E Preparation Method: EPA 1631E							
Mercury	1.51	ng/L	0.50	1	06/15/16 15:40	06/16/16 09:38	7439-97-6		

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ANALYTICAL RESULTS

Project: Duke Edwardsport

Pace Project No.: 50146738

Sample: 501		Lab ID: 50146738006		Collected: 06/07/16 11:25		Received: 06/07/16 15:10		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic	ND	ug/L	1.0	1	06/13/16 08:00	06/14/16 17:37	7440-38-2		
Selenium	ND	ug/L	1.0	1	06/13/16 08:00	06/14/16 17:37	7782-49-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	24	mg/L	10.0	1		06/09/16 07:19			

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QUALITY CONTROL DATA

Project: Duke Edwardsport

Pace Project No.: 50146738

QC Batch: CVFS/1400

Analysis Method: EPA 1631E

QC Batch Method: EPA 1631E

Analysis Description: 1631E Mercury

Associated Lab Samples: 50146738001, 50146738002, 50146738003, 50146738004, 50146738005

METHOD BLANK: 1563987

Matrix: Water

Associated Lab Samples: 50146738001, 50146738002, 50146738003, 50146738004, 50146738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	06/16/16 08:38	

METHOD BLANK: 1563988

Matrix: Water

Associated Lab Samples: 50146738001, 50146738002, 50146738003, 50146738004, 50146738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	06/16/16 10:34	

METHOD BLANK: 1563989

Matrix: Water

Associated Lab Samples: 50146738001, 50146738002, 50146738003, 50146738004, 50146738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	06/16/16 11:20	

LABORATORY CONTROL SAMPLE: 1563990

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ng/L	5	5.28	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1563991 1563992

Parameter	Units	50146738005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ng/L	1.51	5	5	7.24	7.31	115	116	71-125	1	24	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1563993 1563994

Parameter	Units	50146648003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ng/L	ND	2.5	2.5	2.76	2.58	102	94	71-125	7	24	

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QUALITY CONTROL DATA

Project: Duke Edwardsport

Pace Project No.: 50146738

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1563995 1563996												
Parameter	Units	50146983001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ng/L	39.2	50	50	87.0	88.0	96	98	71-125	1	24	

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QUALITY CONTROL DATA

Project: Duke Edwardsport

Pace Project No.: 50146738

QC Batch: MPRP/21139

Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8

Analysis Description: 200.8 MET

Associated Lab Samples: 50146738006

METHOD BLANK: 1559101

Matrix: Water

Associated Lab Samples: 50146738006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	1.0	06/14/16 16:40	
Selenium	ug/L	ND	1.0	06/14/16 16:40	

LABORATORY CONTROL SAMPLE: 1559102

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	40.8	102	85-115	
Selenium	ug/L	40	41.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1559103 1559104

Parameter	Units	50146711002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	2.1	40	40	42.5	42.3	101	101	70-130	0	20	
Selenium	ug/L	ND	40	40	40.5	40.4	100	100	70-130	0	20	

MATRIX SPIKE SAMPLE: 1559105

Parameter	Units	50146800007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L		1.3	40	42.6	103	70-130
Selenium	ug/L		ND	40	40.7	101	70-130

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QUALITY CONTROL DATA

Project: Duke Edwardsport

Pace Project No.: 50146738

QC Batch: WET/29617

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 50146738006

METHOD BLANK: 1557107

Matrix: Water

Associated Lab Samples: 50146738006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	06/09/16 07:17	

LABORATORY CONTROL SAMPLE: 1557108

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	295	98	80-120	

SAMPLE DUPLICATE: 1557109

Parameter	Units	50146736009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	549	549	0	10	

SAMPLE DUPLICATE: 1560350

Parameter	Units	50146856003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	530	523	1	10	

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QUALIFIERS

Project: Duke Edwardsport

Pace Project No.: 50146738

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Duke Edwardsport

Pace Project No.: 50146738

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50146738001	Field Blank	EPA 1631E	CVFS/1400	EPA 1631E	CVFS/1401
50146738002	Outfall 002	EPA 1631E	CVFS/1400	EPA 1631E	CVFS/1401
50146738003	Collector Well #1	EPA 1631E	CVFS/1400	EPA 1631E	CVFS/1401
50146738004	Collector Well #2	EPA 1631E	CVFS/1400	EPA 1631E	CVFS/1401
50146738005	501	EPA 1631E	CVFS/1400	EPA 1631E	CVFS/1401
50146738006	501	EPA 200.8	MPRP/21139	EPA 200.8	ICPM/3197
50146738006	501	SM 2540C	WET/29617		

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Client Name: JRM Env.

Project # 80146738

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Date/Time 5035A kits placed in freezer

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer 123456 ABCDEF

Type of Ice: Wet Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature (Initial/Corrected) 1.2°C/1.2°C

Ice Visible in Sample Containers: ☐ yes ☒ no

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 6/7/16 SJ

Are samples from West Virginia?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1.	
Document any containers out of temp.		2.	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	(Circle) HNO3 H2SO4 NaOH NaOH/ZnAc
-Includes date/time/ID/Analysis		11.	Present Absent
All containers needing acid/base pres. have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	Present Absent
exceptions: VOA, collform, TOC, O&G		13.	
All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted.		14.	
Residual Chlorine Check (SVOC 625 Pest/PCB 608)		15.	
Residual Chlorine Check (Total/Amenable/Free Cyanide)		16.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17.	
Headspace Wisconsin Sulfide	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Project Manager Review			
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution:

Project Manager Review: 8/16

Date: 6/7/16

Sample Container Count

CLIENT:

SRM

COC PAGE

1 of 1

COC ID#

1936214

Project #

50146738

Sample Line

Item	DG9H	AG1U	WG1U	AG0U	R	4/6	BP2U	BP2S	BP3U	BP3S	AG3S	AG1H	BP3C	BP1U	SP5T	AG2U	pH <2	pH >9	pH >12
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Container Codes

Item	DG9H	40mL HCL	amber vial	AG0U	100mL unpreserved	amber glass	BP1N	1 liter HNO3	plastic	DG9P	40mL TSP	amber vial
AG1U	1 liter unpreserved	amber glass	AG1H	1 liter HCL	amber glass	BP1S	1 liter H2SO4	plastic	DG9S	40mL H2SO4	amber vial	
WG1U	4oz clear soil jar	AG1S	1 liter H2SO4	amber glass	BP1U	1 liter unpreserved	plastic	DG9T	40mL Na Thio	amber vial		
R	terra core kit	AG1T	1 liter Na Thiosulfate	amber glass	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved	amber vial			
BP2N	500mL HNO3	plastic	AG2N	500mL HNO3	amber glass	BP2A	500mL NaOH, Asc Acid	plastic	SP5T	120mL Coliform Na Thiosulfate		
BP2U	500mL unpreserved	plastic	AG2S	500mL H2SO4	amber glass	BP2O	500mL NaOH	plastic	JGFU	4oz unpreserved	amber wide	
BP2S	500mL H2SO4	plastic	AG2U	500mL unpreserved	amber glass	BP2Z	500mL NaOH, Zn Ac		U	Summa Can		
BP3N	250mL HNO3	plastic	AG3U	250mL unpreserved	amber glass	AF	Air Filter		VG9H	40mL HCL	clear vial	
BP3U	250mL unpreserved	plastic	BG1H	1 liter HCL	clear glass	BP3C	250mL NaOH	plastic	VG9T	40mL Na Thio	clear vial	
BP3S	250mL H2SO4	plastic	BG1S	1 liter H2SO4	clear glass	BP3Z	250mL NaOH, Zn Ac	plastic	VG9U	40mL unpreserved	clear vial	
AG3S	250mL H2SO4	glass	BG1T	1 liter Na Thiosulfate	clear glass	C	Air Cassettes		VSG	Headspace septa	vial & HCL	
AG1S	1 liter H2SO4	amber glass	BG1U	1 liter unpreserved	glass	DG9B	40mL Na Bisulfate	amber vial	WGFU	4oz wide jar	w/hexane wipe	
BP1U	1 liter unpreserved	plastic	BP1A	1 liter NaOH, Asc Acid	plastic	DG9M	40mL MeOH	clear vial	ZPLC	Ziploc Bag		